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| APPLICATION NO.                         | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/309,155                              | 05/10/1999  | MATTHEW ZAVRACKY     | KPN97-04A5          | 7157             |
| 21005                                   | 7590        | 09/07/2005           | EXAMINER            |                  |
| HAMILTON, BROOK, SMITH & REYNOLDS, P.C. |             |                      | WU, XIAO MIN        |                  |
| 530 VIRGINIA ROAD                       |             |                      | ART UNIT            |                  |
| P.O. BOX 9133                           |             |                      | PAPER NUMBER        |                  |
| CONCORD, MA 01742-9133                  |             |                      | 2674                |                  |

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/309,155

Applicant(s)

ZAVRACKY ET AL.

Examiner

XIAO M. WU

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 12-23 and 29-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-23 and 29-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/22/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/22/2005 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, 12, 13, 15, 19-23, 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart et al (US Patent No. 5,337,068) in view of Lim (US Patent No. 5,300,976) and Komatsu et al. (US Patent No. 6,133,979).

As to claims 1, 12-13, 19-23, 29-33, Stewart discloses a method of displaying an image comprising the steps of: providing a matrix liquid crystal display; writing an image to the display; clearing the image from the display; flashing a light source; and repeating the steps of writing; clearing and flashing to producing a second image (see Fig. 6). It is noted that Stewart does not specifically disclose the matrix liquid crystal display having array of at least 75,000 pixel electrodes and an active area of less than 20 mm<sup>2</sup>. It is also noted that Stewart does not disclose heating the liquid crystal in a repeat cycle.

It is well known in the art that the LCD display can be made in very small size such as a viewfinder as taught by Lim. As shown in Figs. 2a, and 2b, Lim discloses a LCD display device 5a in combination with a light source 5e used in a viewfinder similar to applicant invention. Therefore, it would have been obvious to one of ordinary skill in the art to have modified Stewart's LCD into a very small display (e.g. view finder) as taught by Lim because the active matrix LCD is controlled by a TFT switch which is build on a substrate and the pixel can be made in a very small size.

Komatsu is cited to teach liquid crystal display including backlight source similar to Stewart. Komatsu further discloses a heater for heating the liquid crystal when the light source is turned on (col. 4, lines 5-66, and see Figs. 6 and 7). It would have been obvious to one of ordinary skill in the art to have modified Stewart and Lim with the features of the heating liquid crystal display as taught by Komatsu so as to maintain a proper temperatures range for the liquid crystal display.

As to claim 2, Stewart discloses the steps of allowing the liquid crystal image to rotate towards equilibrium prior to flashing the light source (column 11, line 57 to column 12, line 2).

As to claim 3, Stewart discloses the flashing of the light source ends before the writing of the next image (see Fig. 6).

As to claim 4, Stewart discloses the flashing of the light source continuous for a specific time period of the writing of the next image (Fig. 6).

As to claim 5, Stewart discloses the liquid crystal display is an active matrix LCD having a plurality of pixel electrodes, counter electrode and an interposed liquid crystal (see Fig. 2b).

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As to claims 6 and 7, Stewart discloses the step of clearing the image from the display comprising the step of initializing the pixel electrodes to a set voltage (Fig. 6).

As to claim 15, Stewart does not specifically disclose the flashing rate is 165 subframes per second. However, it would have been obvious to one of ordinary skill in the art to have designed a suitable range of the flashing rate in order to avoid a flickering.

4. Claims 8-11, 18, 24-28 and 34-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart et al (US Patent No. 5,337,068) in view of Lim (US Patent No. 5,300,976) and Komatsu et al. (US Patent No. 6,133,979) as applied to claims 1-7, 12, 13, 15, 19-23, 29-33 above, and further in view of Verhulst (US Patent No. 5,627,560).

As to claims 8-11, 18, 24-28 and 34-42, note the discussion of Stewart, Lim and Komatsu above. Stewart, Lim and Komatsu do not specifically disclose switching the applied voltage to the counter electrode panel after every subframe. However, it is well known in the art to switch the applied voltage to the counter electrode panel after every frame. As shown in Fig. 5, a reset signal is applied to the counter prior for clearing the image prior to the selection of the display lines. It would have been obvious to one of ordinary skill in the art to have modified Stewart as modified with the features of the AC driving as taught by Verhulst because the blanking signal is now presented via another drive circuit than the data signal, lower voltages can be used in these drive circuits than in the case where both signals are presented via the same path. Consequently, simpler and lower cost circuits are sufficient, while they have also a lower energy consumption (col. 2, lines 6-12 of Verhulst).

***Allowable Subject Matter***

5. Claims 14, 16 and 17 are allowed.

***Response to Arguments***

4. Applicant's arguments with respect to claims 1-9, 12-23, 29-42 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The US 5,088,806, 4,763,992, 6,089,751 and 6,211,852 are cited to teach a liquid crystal display including temperature control.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAO M. WU whose telephone number is 571-272-7761. The examiner can normally be reached on 6:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, PATRICK EDOUARD, can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

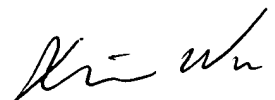
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x.w.

September 2, 200



**XIAO M. WU**  
**Primary Examiner**  
**Art Unit 2674**